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Claims 1-31 remain in the application.

The Applicants take note that Claims 25-30 contain allowable subject matter, as stated in Item 9 of the Office Action.

In Item 2 of the Office Action, the Examiner has objected to Fig. 6 because *"reference characters '10' and '100' have both been used to designate the chassis"*. The Applicants argue that the label "10" designating the chassis in Fig. 6 should have been labeled "100", in accordance with the specification and with Figs. 5, 8 and 9, which are correctly labeled. The presence of label "10" to designate the chassis is a typographical error.

Still in Item 2 of the present Office Action, the Examiner has objected to the drawings under 37 CFR 1.83(a). More specifically, the Examiner states that *"the input/output connector being connected to the card connector by a printed circuit of the printed circuit board body"* is not illustrated in the figures. Accordingly, the Applicants have amended paragraphs [0026] and [0028], in which there is support for such printed circuit, and Figs. 1 and 3 to identify a printed conductive circuit at 35 and 65, respectively. Moreover, with regard to this objection, the Applicants argue that the *"peripheral device"* of Claim 1 is not a physical limitation of the *"connector panel"* of Claim 1, whereby it is not illustrated. However, the Applicants argue that various peripheral devices that can be connected to the *"at least one input/output connector"* of the *"connector panel"* of the present invention are described in the specification.

Still in Item 2 of the present Office Action, the Examiner objects to the drawings as the *"at least three micro panel layers"* are not illustrated in the drawings. Accordingly, the Applicants have amended paragraphs [0025] and [0028], in which there is support for such micro-panel layers, as well as Figs. 2 and 4, to visually illustrate the *"micro-panel layers"* that constitute the *"connector panel"*. More specifically, the layers are identified in Figs. 2 and 4 as layers A, B and C.

Still in Item 2 of the Office Action, the Examiner has objected to the drawings as failing to illustrate *"the tapped hole"*. The Applicants argue that the holes are

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illustrated at 136 in Fig. 5. The Applicants further argue that providing a view of the tapping in hole 136 would be irrelevant considering that tapped holes are known in the industry.

Accordingly, following the above amendments and argumentation, the Applicants believe that the objections of the Examiner with regard to the drawings are herein traversed.

In Item 4 of the present Office Action, the Examiner has rejected Claims 1-11 under 35 USC 112, second paragraph, *"as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention"*. More specifically, the Examiner states that the *"phrase 'of the type' renders the claim(s) indefinite"*. Accordingly, the Applicants have amended Claim 1 by removing the phrase *"of the type"*.

The present invention describes connector panels that are mounted side by side to a housing in order to form a face of the housing. The connector panels are formed of a printed circuit board body, and are intermediates between electronic cards within the housing and peripheral devices. The printed circuit board body has printed circuitry that wires a card connector, for the electronic card, to input/output connectors, for the peripheral devices.

Amongst the features of the present invention, the connector panels are mounted side by side so as to define a face of a housing. The connector panels have a shielding configuration so as to form a shield between adjacent connector panels when mounted side by side, so as to respect the electromagnetic interference integrity of the housing. The shielding configuration of the connector panel is well described in the present application. For instance, in paragraph [0026], it is stated that *"each rear connector panel 10 has a conductive plane to ensure the electromagnetic shielding thereof"*. Thereafter, the shielding configuration forming a shield between adjacent panels is described, with an embodiment of the present invention involving a conductive gasket. It is stated in paragraph [0033] that *"the gasket 68 is conductive, thereby ensuring the EMI shielding between adjacent rear connector panels"*. Furthermore, in paragraphs [0034] and [0035], various functions of the connector panels are emphasized. For instance, it is

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stated that the connector panels *"have a structural function as they make up a portion of the rear face of the housing. They also hold the input or output connectors by which the electronic card may be wired to peripherals. The rear connector panels also have a shielding function as they are shielded from electromagnetic interference by each having a conductive plane, thereby maintaining shielding of the housing when mounted thereto"*. It is further added in paragraph [0035] that *"the rear connector panels are the link between the input/output connectors and the electronic cards. As the rear connector panels are made of a printed circuit board, they have the required circuitry thereon to process the signals to and from the electronic cards"*.

From these functions of the connector panel, advantages are set forth. For instance, still in paragraph [0035], it is stated that *"the fact that the rear connector panels are printed circuit boards causes a simplifying of the configuration of the housing frames as the rear connector panels of the present invention combine the features of the metal plate/printed circuit board configuration making up the rear connector panels of the prior art"*. Thereafter, further advantages of the connector panels of the present invention are described.

U.S. Patent No. 5,943,219, issued on August 24, 1999 to Bellino et al. (hereinafter *"the Bellino reference"*), describes circuit cards of a system that is similar to what the Applicants have described in paragraph [0006] of the *Background Art* section of the present application. More specifically, the cards, as illustrated in 302 of Fig. 3 of the Bellino reference, each have a face plate 304 by which they will be supported within a housing. This is specified in column 3 between lines 55 and 57 of the Bellino reference: *"Attached to each circuit card is a face plate 304, or stiffener, to provide a brace for the circuit card [302] and to hold the circuit card [302] into the frame"*. Thereafter, seals 322 are illustrated, as shown in Fig. 3, to ensure the EMC shielding between face plates 304.

As mentioned previously, the Applicants have described in paragraph [0006] of the *Background Art* section a similar system, in which the circuit cards are secured to the face plate.

The Applicants argue that the connector panels of the present invention patentably distinguish over the system of the Bellino reference in various aspects. The

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connector panels of the present invention have a structural function, as they will form a shielded face of a housing, similar to the system of the Bellino reference. However, the printed circuit board body of the connector panels of the present invention enables a more efficient wiring between input/output connectors and electronic card, by printed circuitry, whereas the metallic face plate of the Bellino reference system requires some wires.

The printed circuitry enables the presence of a card connector that enables the connector panels to be releasably connected to the card connector, unlike the face plate of the Bellino reference system, which are fixed to the card. Accordingly, the rear connector panel and card combination of the present invention is both a more efficient solution in space optimization (printed circuitry vs. wires), and in manufacturing (no need to assemble the connector panel to the electronic card).

U.S. Patent No. 6,496,376, issued on December 17, 2002 to Plunkett et al. (hereinafter "*the Plunkett reference*"), describes various printed circuit board modules, such as the CPU Model 30 of Fig. 2, the ISA card 40 of Fig. 7 and the PCI modules 52 of Fig. 7, which are interconnectable laterally to define a backplane. In order to remain assembled, the above-described modules are mounted to a base plate 58, as illustrated individually in Fig. 6, and with the modules in Fig. 7. It is stated between lines 30 and 34 of column 5 of the Plunkett reference that "*the base plate [58] [...] provide[s] strong mechanical support for keeping the modules in a coplanar relationship, and to prevent the modules for suffering damage as circuit cards are plugged in and out of the orthogonally oriented connectors of the modules*".

The Applicants point out that the modules 30, 40 and 52 that are described in the Plunkett reference have a different function than the connector panels of the present invention. The connector panels of the present invention are intermediates between a peripheral device and an electronic card, and structurally define a face of a housing. The modules 30, 40 and 52 of the Plunkett reference do not serve this second function, as it is clear that they are mounted to a base plate 58.

The Examiner rejects Claim 1 as being anticipated by the Plunkett reference. In view of the above argumentation, the Applicants have amended Claim 1 to further accentuate the patentable distinctions between the connector panel, as defined in

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Claim 1, and the modules of the Plunkett reference. More precisely, the limitation "*said connector panel adapted for being mounted side by side and in shielding connection with similar ones of said connector panel to cover the opening of the housing so as to maintain the shielding of the housing*" has been amended to "~~*said connector panel adapted a shielding configuration for being mounted side by side and in forming a shielding connection with*~~ *between the connector panel and a similar ones of said connector panel mounted side by side* to cover the opening of the housing, so as to maintain the shielding of the housing". This amended limitation, supported by the specification, emphasizes that the connector panel is to cover an opening of the housing, a limitation clearly not taught by the Plunkett reference. The Applicants point out that the words "*shield*" and "*interference*" are not present in the Plunkett reference, whereby the Applicants argue that the modules of the Plunkett reference are not configured so as to provide shielding as the connector panels of the present invention provide in side-by-side relation.

The Applicants have also voluntarily amended the limitation "*a card connector on said panel adapted for being connected to an electronic card in the housing*", to "*a card connector on said panel adapted for being releasably connected to an electronic card in the housing*", to further emphasize the detachable feature of the connector panel.

The Applicants also argue that neither the Plunkett reference nor the Bellino reference describes the possibility of having a printed circuit board to close off a face of a housing. Clearly, the Plunkett reference describes a base plate that will be supporting printed circuits, whereas the Bellino reference describes the metallic face plates to perform this function.

Accordingly, in view of these arguments, the Applicants believe that the connector panel, as defined in Claim 1; patentably distinguishes over the Plunkett reference, and a combination of the Plunkett reference with the Bellino reference. Claim 2 has been amended to adjust to the amendment of Claim 1.

In Item 6 of the present Office Action, the Examiner rejects Claim 5 under 35 USC 103(a) by stating that the Bellino reference discloses "*panel bodies having at least three portions with the middle layer being set back from the other one of the three*

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portions". The Applicants argue that the Bellino reference does not describe the use of "micro-panel layers" to define the printed circuit board body. The layering is an important limitation, in that it is the layering process that is adapted to define "the longitudinal channel". Therefore, once the "micro-panel layers" form the body of the connector panel, it is contemplated to have a middle layer set back, as described in Claim 6, to define "the longitudinal channel". This enables removal of a step defining a channel, for instance, by mechanically defining one. The face plate of the Bellino reference is described as "a conductive metal (or plastic with a conductive coating)", as described between lines 62 and 63 of column 3 of the Bellino reference. Therefore, the Bellino reference does not contemplate using micro-panel layering. Moreover, it is anticipated that the face plate of the Bellino reference comes from an extrusion process, whereby no layers are defined. Accordingly, the Applicants believe that Claim 5 patentably distinguishes over the Bellino reference.

The Examiner has rejected Claim 12 as being anticipated by the Bellino reference. The Applicants argue that the housing of Fig. 2 of the Bellino reference has face plates fixed to the electronic cards. When a card must be removed from the housing, the card to which it is attached must also come out, as described in lines 7 to 9 of column 4 (i.e., "Fig. 4 illustrates a top view of the shelf of Fig. 3 with one face plate 304 and card pulled forward to illustrate an exemplary embodiment of this invention"), and in Fig. 4.

The Applicants argue that the connector panels of the housing of the present invention are separable from the cards, thereby resulting in a more space-efficient solution as described previously. The Applicants have amended Claim 12 to add the limitation that the connector panels are "releasably connected" to an electronic card. Accordingly, the Applicants believe that Claim 12 patentably distinguishes over the Bellino reference.

Moreover, the argumentation set forth hereinabove for Claim 5 regarding the "micro-panel layers" is applied to Claim 16, whereby the Applicants believe that Claim 16 patentably distinguishes over the Bellino reference.

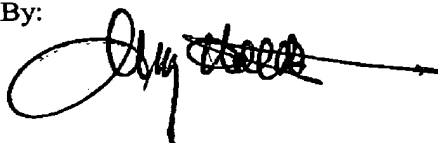
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In view of the above amendments and remarks, the Applicants believe that this application is in order for allowance, and early notice to that effect is earnestly solicited.

Respectfully submitted,
SYLVAIN MARCOTTE ET AL.

By:

December 8, 2003

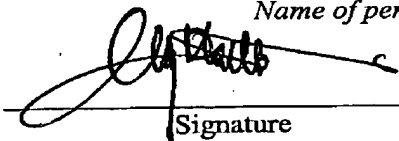
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Encl. - Amended Figs. 1, 2, 3 4 and 6

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